

REMARKS

Claims 1-12 and 22-32 are active in the case. Reconsideration is respectfully requested.

The present invention relates to a crosslinkable hotmelt adhesive.

Claim Amendment

Claim 30 has been amended in order to correct an awkwardness of language therein. The amendment that has been made is not believed to have introduced new matter into the case. Entry of the amendments into the record is respectfully requested.

Obviousness Rejection, 35 USC 103

Claims 1-9, 22-29, 31 and 32 stand rejected based on 35 USC 103(a) as obvious over Simon et al, U.S. Patent 6,300,413 in view of Hefele '064. This ground of rejection is respectfully traversed.

The Simon et al patent is discussed in the present specification on page 3 of the text, with reference to the parent German application DE 198 08 809. As explained in the text, a *free isocyanate is stabilized against water by incorporating the isocyanate into an inert polyethylene matrix (col 2, lines 40-42 of patent '413). Subsequently, the polyethylene is ground to a fine state. By this means success is achieved in creating a stable crosslinkable system for the base dot. The disadvantage of this system is the complicated and hence expensive preparation of the water-stable isocyanate. Additionally, the polyethylene matrix hinders the diffusion rate, which signifies a reduction in the reaction rate.* As stated in the first paragraph of column 1 of the '413 patent, the composition of the base dot is an amine terminated copolyamide and a pulverized extrudate consisting of an atactic polyolefin and a

pulverulent isocyanate or an epoxide. The bottom of column 2 of the patent states that the isocyanate had to be stabilized against diffusion of atmospheric moisture, in order to ensure its activatability at relatively low temperatures. This has been made possible by binding the isocyanate into a polyolefin polymer at the bottom of column 2 of the patent. Thus, the system of the base dot of the reference provides for the cross-linking of the composition of the base dot.

The base dot system of the present invention differs from that of the '413 in several respects, one of which is that there is no requirement to stabilize an isocyanate crosslinking reactant in a polyolefin matrix. Note that the reference states at column 2, lines 8-9 of the patent that prior to the invention of the patent it had not been possible to provide a stable cross-linkable system for a base dot. However, because of the stabilization achieved by incorporating the isocyanate reactant or an epoxide into the polyolefin matrix, effective cross-linking within the base dot was achieved.

The specification discloses in the paragraph bridging pages 7 and 8 that the lower dot is crosslinked even under the drying conditions described and, because of the presence of amine groups at the termini of the amine terminated copolyamide component of the upper dot system, the upper dot system is crosslinked with the lower dot during the melting of the dots. This inter-dot bonding, at least in-part results in the improvement of the present invention.

The Examiner at paragraph 6 o of the Office Action states that *Simon et al* discloses an upper and lower dot structure wherein the dots comprise either an amine-terminated copolyamide (col 1, line 10) or an OH-terminated copolyester (col 1, lines 21-22) and further comprises a crosslinker (col 3, line 42) and acrylic acid and acrylic acid and polyurethane dispersions (col 1, line 56-57). Applicants maintain that this description does not accurately describe the differences between the upper and lower dots disclosed by the patent, on the one hand, and the present invention as claimed, on the other hand. That is, the base dots of the

reference are comprised of amine-terminated copolyamide or a copolyester and a pulverized extrudate consisting of atactic polyolefin and a pulverulent isocyanate or an epoxide. On the other hand, the base dot composition of the invention does not comprise a polyolefin extrudate which contains either an epoxide or an isocyanate, but which must specifically be comprised of an OH-terminated polyester, a crosslinker and an acrylic dispersion, a polyurethane dispersion or an acrylic and polyurethane dispersion. The Examiner's comment, on the contrary, can be viewed as placing either or both of the amine-terminated copolyamide or the copolyester in the base dot composition or the upper dot composition. Further, the Examiner's comments can be viewed as placing the cross-linking agent in either or both of the upper and base dot compositions. This is not the case in the present invention where the crosslinker such as a passivated isocyanate or epoxide is only present in the composition of the base dots. Accordingly, the Simon et al patent is not believed to suggest the present invention as claimed.

The disclosure of Hefe teaches a double dot, hot-melt adhesive composition, wherein the base layer that is comprised of a mixture of a copolyester and a low-pressure polyethylene and a top or covering layer that is comprised of a copolyester or copolyamide or mixtures thereof. From this description it is clear that the base layer of the system of the patent is markedly different from the base dot composition of the present invention, which, as indicated above, is based on the combination of an OH-terminated polyester, a crosslinker and an acrylic dispersion, a polyurethane dispersion or an acrylic and polyurethane dispersion. The reference does not suggest the presence of a crosslinker among base layer components. Moreover, the patent clearly requires the combination of a copolyester and a low pressure polyethylene as the adhesive resin components of the base layer, particularly where the combination of polymers is required in a mole ratio of copolyester to low pressure polyethylene ranging from 2:1 to 2:3 (col 3, lines 52-55). No such combination of polymer

materials is set forth in the present claims. Thus, the base layer composition of the system of Hefe does not place the teachings of the Simon et al patent closer to the present invention.

The Examiner is also believed to be incomplete in his comments concerning the statement in paragraph 18 to the effect that Hefe *teaches multilayer adhesive structures in accordance with the double dot method analogous to those structures disclosed in Simon et al with lower dots comprising copolyesters and upper dots comprising copolyamides*. The fact is that the lower or base layer material is not just a copolyester, but is a specific combination of copolyester with low pressure polyethylene, particularly in a mole ratio of 2:1 to 2:3. This low pressure polyethylene component of the Hefe is quite different from the isocyanate or epoxide containing polyolefin extrudate of Simon et al. The Examiner does not seem to recognize this in his comments.

The matter of the patentability of the subject matter of Claim 29 of a method of coating or laminating sheet-like structures is believed patentable over the cited prior art for the reasons presented above. Withdrawal of the rejection is respectfully requested.

Claim 10 stands rejected based on 35 USC 103(a) as obvious over Simon et al, U.S. Patent 6,300,413 in view of Hefe '064 and in view of Kohlhammer et al. This ground of rejection is respectfully traversed.

Claim 10 is directed to a secondary aspect of the invention in which epichlorohydrin is the crosslinking component of the base dot composition of the invention. This is not a feature upon which patentability depends. Withdrawal of the rejection is respectfully requested.

Claim 11 stands rejected based on 35 USC 103(a) as obvious over Simon et al, U.S. Patent 6,300,413 in view of Hefe '064, with further evidence provided by Mattor et al, U.S. Patent 4,282,054. This ground of rejection is respectfully traversed.

The feature of Claim 11 is a secondary feature upon which patentability does not depend. The fact that the base dots of the system of the invention contain an OH-terminated polyester is a significant feature of the invention. However, patentability does not depend on this issue. Withdrawal of the rejection is respectfully requested.

Claim 12 stands rejected based on 35 USC 103(a) as obvious over Simon et al, U.S. Patent 6,300,413 in view of Hefele '064, and further in view of Hiratsuka et al, U.S. Patent 5,019,347. This ground of rejection is respectfully traversed.

It is clear that if the cited prior art discussed above does not show or suggest the composition of the lower dots as claimed in the present invention, the further addition of a passivated isocyanate reactant does not lead one of skill to the composition of lower dots of the present invention. Moreover, the subject matter of Claim 12 is of secondary interest, and not a matter which is critical to patentability. Accordingly, the stated ground of rejection is believed overcome and withdrawal of the rejection is respectfully requested.

Claim 30 stands rejected based on 35 USC 103(a) as obvious over Simon et al, U.S. Patent 6,300,413 in view of Hefele '064 and further in view of Kohlhammer et al '244 and Dobson et al '877. This ground of rejection is respectfully traversed.

The feature of Claim 30 is directed to a secondary aspect of the invention of the acceleration of the crosslinking reaction by catalysis. As such, it is not a feature upon which patentability of the invention rests. The cited secondary prior art does not bring the art closer to the invention as claimed. Withdrawal of the rejection is respectfully requested.

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It is now believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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